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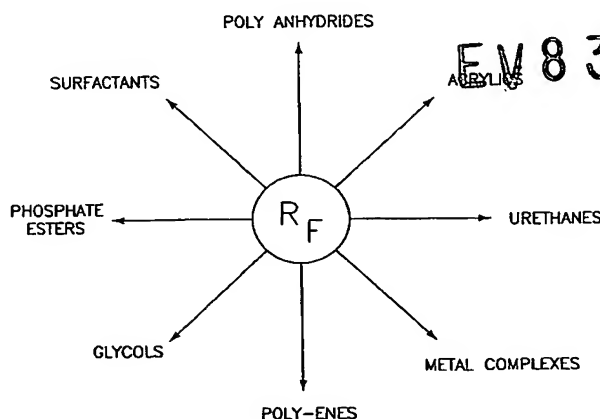
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(54) Title: PRODUCTION PROCESSES AND SYSTEMS, COMPOSITIONS, SURFACTANTS, MONOMER UNITS, METAL COMPLEXES, PHOSPHATE ESTERS, GLYCOLS, AQUEOUS FILM FORMING FOAMS, AND FOAM STABILIZERS

(57) Abstract: Production processes and systems are provided that include reacting halogenated compounds, dehalogenating compounds, reacting alcohol's, reacting olefins and a saturated compounds, reacting reactants having at least two -CF$_3$ groups with reactants having cyclic groups. R$_F$-compositions such as R$_F$-intermediates, R$_F$-surfactants, R$_F$-monomers, R$_F$-monomer units, R$_F$-metal complexes, R$_F$-phosphate esters, R$_F$-glycols, R$_F$-urethanes, and/or R$_F$-foam stabilizers. The R$_F$ portion can include at least two -CF$_3$ groups, at least three -CF$_3$ groups, and/or at least two -CF$_3$ groups and at least two -CH$_2$- groups. Detergents, emulsifiers, paints, adhesives, inks, wetting agents, foamers, and defoamers including the R$_F$-surfactant composition are provided. Acrylics, resins, and polymers are provided that include a R$_F$-monomer unit. Compositions are provided that include a substrate having a R$_F$-composition thereover. Aqueous Film Forming Foam ("AFFF") formulations are provided that can include R$_F$-surfactants and/or R$_F$-foam stabilizers are provided.

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